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10/581,281	05/31/2006	Larry C. Olsen	23-65037-09	3124

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EXAMINER	
MOWLA, GOLAM	

ART UNIT	PAPER NUMBER
1795	

NOTIFICATION DATE	DELIVERY MODE
12/16/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/581,281	OLSEN ET AL.	
	Examiner	Art Unit	
	GOLAM MOWLA	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 August 2009 and 13 October 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *37-66* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *37-66* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *08/31/2009 and 10/13/2009*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

FINAL ACTION

Response to Amendment

1. Applicant's amendment of 08/31/2009 does not place the Application in condition for allowance.

2. Claims 37-66 are currently pending. Applicant has amended claims 33-44, 50-53 and 55-57, and cancelled claims 1-36 and 67-85.

Status of the Objections or Rejections

3. The objections to the claims 38-44 and 53 are withdrawn in view of Applicant's amendment.

4. Due to Applicant's amendment of claims 33-44, 50-53 and 55-57, all rejections from the office Action dated 04/30/2009 are withdrawn. However, upon further consideration, a new ground(s) of rejection is presented below.

Claim Objections

5. Claim 61 is objected to because of the following informalities: "...the a means for alternately ..." is recited in line 1 although "...the means for alternately..." is intended. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 45, 61-63 and 65-66 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 45 is indefinite because it recites the limitation "the steps of..." in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 61 is indefinite because it recites the limitation "the means for alternately ..." in line 1. There is insufficient antecedent basis for this limitation in the claim. It is suggested to change "the means for alternately ..." to "a means for alternately ..." or change the dependency of the instant claim to claim 60.

Claim 62 is indefinite because it recites the limitation "the means for ..." in line 2. There is insufficient antecedent basis for this limitation in the claim. It is suggested to change the dependency of the instant claim to claim 60.

Claim Rejections - 35 USC § 102

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 50-61 are rejected under 35 U.S.C. 102(b) as being anticipated by Hed (US 5228923).

Regarding claims 50, 53 and 57-59, Hed discloses an apparatus for generating electrical energy (as depicted in fig. 1; see also 3:24-31 and 3:66-5:24) from an environment having a first temperature region (region containing external retaining annulus 13) (col. 4, lines 32-36) and a second temperature region (region containing inner annulus 12) comprising a thermoelectric device (device comprising p- and n-type

legs 15 and 16) having a first side in communication with a first means (external retaining annulus 13) for transmitting ambient thermal energy collected in the first temperature region (see fig. 1 for configuration) and a second side in communication with a second means (inner annulus 12) for transmitting ambient energy collected in the second temperature region in communication with the second side of the thermoelectric device (10); the first means (external retaining annulus 13) for transmitting ambient thermal energy comprising a heat- conductive high-temperature heat pipe (annulus 13) connected to a hot connection (hot electrode 18) of the thermoelectric device (col. 4, lines 30-34) to transfer heat to and from the thermoelectric device; and the thermoelectric device is consisting of discrete element semiconductors assembled in alternating p-type (p-type leg 15) and n-type (n-type leg 16) arrays (see fig. 1) and connected electrically in series, parallel, or in combination thereof (see fig. 1 for configuration).

Hed further discloses that the heat conductive high-temperature heat pipe (13) includes working fluid (col. 3, lines 12-19 and col. 4, lines 34-40, and col. 10, lines 16-22). Since there is not structural and material difference between the apparatus of Hed and instant claimed apparatus, and Hed also discloses the heat pipe (13) comprises working fluid, the high-temperature heat pipe (13) of Hed must inherently transfer heat to and from the thermoelectric device by a phase change of the working fluid, from liquid to vapor or vapor to liquid, contained in the high-temperature heat pipe (13). If different results are achieved, it must be due to the limitations that are not present in the claim.

Regarding claim 51, Hed further discloses that the second means (12) for transmitting ambient energy collected in the second temperature region comprises a heat conductive low-temperature heat pipe (inner annulus 12) connected to a cold connection (cold electrode 17) of the thermoelectric device, and wherein the low-temperature heat pipe (12) includes working fluid (col. 3, lines 12-19 and col. 4, lines 34-40, and col. 10, lines 16-22). Since there is not structural and material difference between the apparatus of Hed and instant claimed apparatus, the low-temperature heat pipe (12) of Hed must inherently transfer heat to and from the thermoelectric device by a phase change of the working fluid contained in the high-temperature heat pipe (12). If different results are achieved, it must be due to the limitations that are not present in the claim.

Regarding claim 52, the limitation "the thermoelectric device comprises metallic wire thermocouples..." is optional to the apparatus of claim 50. Since Hed explicitly teaches the use of discrete element semiconductors assembled in alternating p-type (p-type leg 15) and n-type (n-type leg 16) arrays (see fig. 1), the instant claim is rejected.

Regarding claims 54-56, Hed further discloses the p-type and n-type arrays are selected from the group consisting of bismuth telluride, lead telluride or various alloys of silicon and germanium (1:37-40), wherein the p-type and n-type arrays are formed on a flexible substrate (flexible plastic/metallic substrate 23 as shown in fig. 2) (col. 4, lines 43-45, 52-55). With respect to the sputter disposition of the semiconductor elements, Examiner notes sputter deposited patentability of a product does not depend on its

method of production (*In re Thorpe*, 777F.2d 695, 698, 227 USPQ 964,966 (Fed. Cir. 1985)).

Regarding claims 60 and 61, Hed further discloses a battery for alternately storing and discharging electrical energy produced by the thermoelectric devices (6:1-5)

Claim Rejections - 35 USC § 103

10. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

11. Claims 37-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Migowski (WO 89/07836).

Regarding claim 37, Migowski in figures 2-4 discloses a method for providing electrical energy to an electrical device (battery or capacitor; see paragraph bridging pages 2 and 3; see also page 3, lines 22-33) in an environment having a first (7) and a second (7) temperature region (see fig. 3 and 4) comprising the steps of:

- providing a means (6) for transmitting ambient energy collected in the first temperature region (7) (see fig. 3 and last full paragraph on page 4),
- providing a thermoelectric device having a plurality of thermoelectric couples (p-n thermocouples as shown in fig. 4), the thermoelectric couples comprising:
    - a thin film p-type thermoelement (2), a thin film n-type thermoelement (2) (paragraph bridging pages 2 and 3 through the third full paragraph of page 3; also page 4, lines 9-15) and an electrically conductive member (connecting layers 3, see fig. 2 and

pages 8-11 of page 4) electrically connecting a first end of the p-type thermoelement (2) with a second end of the n-type thermoelement (1), wherein the thermoelectric couples are formed on a single flexible substrate (10) (see page 4, lines 6-10; see also claim 8) (see also page 3, lines 4-11) and the flexible substrate is in a coil configuration (paragraph bridging pages 2 and 3);

- providing the means (6) for transmitting the ambient energy collected in the first temperature region (7) in communication with a first side of the thermoelectric device, and providing a second side of the thermoelectric device in communication with the second temperature region (7) (see fig. 3 and 4 for configuration).

Regarding the limitation to a range of specific L/A ratios, selection of element dimensions is considered to be a matter of design choice, depending upon the dimensions and gradient present in the installation site, substrate dimensions, desired number of junctions, desired voltage, among other considerations. In the absence of evidence of criticality, selection of length to area ratios as claimed is considered obvious to one having ordinary skill in the art. Also note that in Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

Regarding claim 38, Migowski further discloses that TE power source produces 11 microwatts of electric power with 7500 series-connected pairs of thermocouples with a resistance of 225 KΩ (see page 4, lines 17-21). However, Migowski is silent as to whether the TE power source produces an electric power in the range of 50 microwatts to 1 watt. One of ordinary skill in the art realizes that the power output of a thermoelectric device/generator is a result effective variable which can be manipulated by addition/omission of thermocouples. Therefore, one skilled in the art can easily determine the optimum number of thermoelectric elements needed to produce optimum electric power, since it has been held that discovering an optimum value for a result of effect variable involves only routine skill in the art (MPEP § 2144.05 II (b)).

Regarding claim 39, Migowski further discloses that the p-type or n-type thermoelements have a thickness of 0.005 mm (see page 4, lines 17-21). Although the disclosed thickness is not same as claimed thickness, selection of element dimensions is considered to be a matter of design choice, depending upon the dimensions and gradient present in the installation site, substrate dimensions, desired number of junctions, desired voltage, among other considerations. In the absence of evidence of criticality, selection of thickness as claimed is considered obvious to one having ordinary skill in the art. Also note that in *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the

claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

Regarding claim 40, Migowski further discloses the thermoelectric elements (1 and 2) are connected in series (see page 4, lines 17-21).

Regarding claims 41-44, Migowski further teaches forming the p- and n-type thermocouples from Bi, Te, Sb, Se, or Pb (3rd full paragraph of page 3). As bismuth telluride and other claimed compounds are conventional thermoelectric materials, selection of these known materials based on this listing would have been obvious to one having ordinary skill in the art. Migowski further discloses sputter deposition of the thermoelements (1st full paragraph on page 3).

Regarding claims 45-47, Migowski further discloses a second means (6) for transferring ambient energy by conduction collected in the second temperature region in communication with the second side of the thermoelectric device and in communication with the second temperature region (7) (see fig. 3 and last full paragraph on page 4).

Regarding claims 48 and 49, Migowski further teaches the temperature difference is $6^{o}C$ (see page 4, lines 17-21).

12. Claims 50-61 are rejected under 35 U.S.C. 103(b) as being unpatentable over Hed (US 5228923) in view of Stachurski (US 4125122).

Regarding claims 50, 53 and 57-59, Hed discloses an apparatus for generating electrical energy (as depicted in fig. 1; see also 3:24-31 and 3:66-5:24) from an environment having a first temperature region (region containing external retaining annulus 13) (col. 4, lines 32-36) and a second temperature region (region containing

inner annulus 12) comprising a thermoelectric device (device comprising p- and n-type legs 15 and 16) having a first side in communication with a first means (external retaining annulus 13) for transmitting ambient thermal energy collected in the first temperature region (see fig. 1 for configuration) and a second side in communication with a second means (inner annulus 12) for transmitting ambient energy collected in the second temperature region in communication with the second side of the thermoelectric device (10); the first means (external retaining annulus 13) for transmitting ambient thermal energy comprising a heat- conductive high-temperature heat pipe (annulus 13) connected to a hot connection (hot electrode 18) of the thermoelectric device (col. 4, lines 30-34) to transfer heat to and from the thermoelectric device; and the thermoelectric device is consisting of discrete element semiconductors assembled in alternating p-type (p-type leg 15) and n-type (n-type leg 16) arrays (see fig. 1) and connected electrically in series, parallel, or in combination thereof (see fig. 1 for configuration).

Hed further discloses that the heat conductive high-temperature heat pipe (13) includes working fluid (col. 3, lines 12-19 and col. 4, lines 34-40, and col. 10, lines 16-22). Since there is not structural and material difference between the apparatus of Hed and instant claimed apparatus, and Hed also discloses the heat pipe (13) comprises working fluid, the high-temperature heat pipe (13) of Hed must inherently transfer heat to and from the thermoelectric device by a phase change of the working fluid, from liquid to vapor or vapor to liquid, contained in the high-temperature heat pipe (13).

In an alternative, it is well known in the thermoelectric art to utilize a working fluid which goes through phase change from liquid to vapor or vapor to liquid state in order to deliver the heat to and/or from the TE module as taught by Stachurski (see figures, col. 2, lines 12-29, and col. 3, line 67 to col. 4, line 52) (see abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have a phase change in the working fluids of Hed as taught by Stachurski in order to deliver the heat to and/or from the TE module.

Regarding claim 51, Hed further discloses that the second means (12) for transmitting ambient energy collected in the second temperature region comprises a heat conductive low-temperature heat pipe (inner annulus 12) connected to a cold connection (cold electrode 17) of the thermoelectric device, and wherein the low-temperature heat pipe (12) includes working fluid (col. 3, lines 12-19 and col. 4, lines 34-40, and col. 10, lines 16-22). Since there is not structural and material difference between the apparatus of Hed and instant claimed apparatus, the low-temperature heat pipe (12) of Hed must inherently transfer heat to and from the thermoelectric device by a phase change of the working fluid contained in the high-temperature heat pipe (12). If different results are achieved, it must be due to the limitations that are not present in the claim. In an alternative, it is well known in the thermoelectric art to utilize a working fluid which goes through phase change from liquid to vapor or vapor to liquid state in order to deliver the heat to and/or from the TE module as taught by Stachurski (see figures, col. 2, lines 12-29, and col. 3, line 67 to col. 4, line 52) (see abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have a

phase change in the working fluids of Hed as taught by Stachurski in order to deliver the heat to and/or from the TE module.

Regarding claim 52, the limitation "the thermoelectric device comprises metallic wire thermocouples..." is optional to the apparatus of claim 50. Since Hed explicitly teaches the use of discrete element semiconductors assembled in alternating p-type (p-type leg 15) and n-type (n-type leg 16) arrays (see fig. 1), the instant claim is rejected.

Regarding claims 54-56, Hed further discloses the p-type and n-type arrays are selected from the group consisting of bismuth telluride, lead telluride or various alloys of silicon and germanium (1:37-40), wherein the p-type and n-type arrays are formed on a flexible substrate (flexible plastic/metallic substrate 23 as shown in fig. 2) (col. 4, lines 43-45, 52-55). With respect to the sputter disposition of the semiconductor elements, Examiner notes sputter deposited patentability of a product does not depend on its method of production (*In re Thorpe*, 777F.2d 695, 698, 227 USPQ 964,966 (Fed. Cir. 1985)).

Regarding claims 60 and 61, Hed further discloses a battery for alternately storing and discharging electrical energy produced by the thermoelectric devices (6:1-5) 13. Claims 50-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Migowski (WO 89/07836) in view of Simeray et al. (US 6,340,787), and further in view of Stachurski (US 4125122).

Regarding claims 50-51 and 57, Migowski in figures 2-4 teaches an apparatus for generating electrical energy from an environment having a first temperature region (7) and second temperature region (7) comprising thermoelectric device (5) having a first

side in communication with the first temperature region (7) and a second side in communication with the second temperature region (7). Migowski further discloses the thermoelectric device comprises discrete element semiconductors assembled in alternating p- and n-type arrays (see fig. 2). Migowski et al suggest use of their thermoelectric generator for general "power supply units, etc" (Page 3, 6th full paragraph). However, the reference is silent as to the use of high-temperature and low-temperature heat pipes connected to a hot connection and cold connection of the thermoelectric device, respectively.

Simeray et al teach low-power thermoelectric generation using small temperature gradients, as used by Migowski et al, specifically teaching that the first and second temperature regions can be the ground and the air above the ground (Figure 6; Column 6, lines 17-30) or air inside a building and air outside a building. (Figure 5, Column 6, lines 10-16). Simeray et al disclose a heat pipe (74) connected to the first end and buried in the ground (Figure 6), a second heat pipe (73) coupled to the second end. Such a "heat exchanger" and "thermal collection stake" read on the instant heat pipes, as they conduct heat to the respective hot and cold junctions.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the method of Migowski by employing the generators in locations such as between the ground and air, or in a wall of a building, as taught by Simeray, because Simeray teaches that such locations provide suitable temperature gradients for low power thermoelectric generators and Migowski suggests

that his generators may be used generally in power supply units. Such a combination will provide the predictable result of successfully generating power.

However, the references are silent as to a phase change of a working fluid in order to transfer heat to and from the thermoelectric device.

It is well known in the thermoelectric art to utilize a working fluid which goes through phase change from liquid to vapor or vapor to liquid state in order to deliver the heat to and/or from the TE module as taught by Stachurski (see figures, col. 2, lines 12-29, and col. 3, line 67 to col. 4, line 52) (see abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized a phase change in a working fluid as taught by Stachurski in the apparatus of Migowski in order deliver the heat to and/or from the TE module.

Regarding claim 52, the limitation "the thermoelectric device comprises metallic wire thermocouples..." is optional to the apparatus of claim 50. Since Migowski explicitly teaches the use of discrete element semiconductors assembled in alternating p-type and n-type) arrays (see fig. 2), the instant claim is rejected.

Regarding claim 53, Migowski further discloses the thermoelectric elements (1 and 2) are connected in series (see page 4, lines 17-21).

Regarding claims 54-56, Migowski further teaches forming the p- and n-type thermocouples from Bi, Te, Sb, Se, or Pb (3rd full paragraph of page 3). As bismuth telluride and other claimed compounds are conventional thermoelectric materials, selection of these known materials based on this listing would have been obvious to one

having ordinary skill in the art. Migowski further discloses sputter deposition of the thermoelements (1st full paragraph on page 3).

Regarding claims 58-59, Migowski further discloses the means for transmitting ambient energy is an ambient energy transmission means by conduction means (see fig. 3 and last full paragraph on page 4).

Regarding claims 60-62, Migowski further discloses the apparatus being used in a sensor system and comprises a battery or capacitor for alternately storing and discharging electrical energy produced by the thermoelectric devices (see paragraph bridging pages 2 and 3; 7th full paragraph on page 3 starting "In addition to the use..."; 7th full paragraph on page 4 starting "It is also conceivable...").

14. Claims 50-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albsmeier et al. (WO 02/095707) in view of Migowski (WO 89/07836) in view of Simeray et al. (US 6,340,787) and Stachurski (US 4125122).

Regarding claims 50-66, Albsmeier is directed to an apparatus for generating electrical energy (Figure 1) from an environment having a first temperature region and a second temperature region comprising a thermoelectric device (1) having a first side and a second side wherein the first side is in communication with a means for transmitting ambient thermal energy collected in the first temperature region (see abstract). Albsmeier further teaches the apparatus further comprising a means for alternately storing and discharging electrical energy produced by the thermoelectric device consisting of a capacitor (7), at least one sensor powered by electrical energy from the capacitor (8), at least one transmitter powered by the capacitor and capable of

transmitting data gathered by the sensor (5, 6), a voltage amplified for amplifying the voltage of electrical energy generated by the thermoelectric device (3), and one microprocessor capable of processing the data and data storage means capable of storing the data (4) (see abstract and Figure 1).

However, the reference is silent as to the disclosure of the thermoelectric device (1).

Migowski in view of Simeray and Stachurski, as discussed above, discloses an apparatus for generating electrical energy wherein the thermoelectric device is according to claims 50-62 (see full description above) and further discloses that it can be used in a sensor system (see 7th full paragraph on page 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have utilized the thermoelectric device of Migowski in view of Simeray and Stachurski in the apparatus of Albsmeier, because the thermoelectric device of Migowski in view of Simeray and Stachurski generates enough electric power and voltage, as taught by Migowski in view of Simeray and Stachurski.

Response to Arguments

15. Applicant's arguments with respect to claims 37-66 have been considered but are moot in view of the new ground(s) of rejection as necessitated by the amendments.

Conclusion

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence/Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GOLAM MOWLA whose telephone number is (571) 270-5268. The examiner can normally be reached on M-F, 0900-1700 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JENNIFER KOLB-MICHENER can be reached on (571) 272-1424 until Dec 31, 2009, or ALEXA NECKEL can be reached on (571) 272-1446 from January 2009, onwards. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/G. M./
Examiner, Art Unit 1795

/Jennifer K. Michener/
Supervisory Patent Examiner, Art Unit 1795